

The DNR tests waters throughout Iowa to make sure they are meeting state water quality standards. Those standards are in place to protect drinking water, aquatic life and recreational uses, like swimming. When a stream or lake doesn't meet those standards, the stream or lake is placed on the state's impaired waters list. The DNR then creates a plan that outlines ways Iowans can help improve the water quality in their community's lakes and streams.

***DNR needs your input***  
Every Iowan needs the help of their fellow citizens and watershed groups to improve water quality in their community. If you or your group would like to meet with a DNR staff member to discuss water quality, please contact Jeff Berckes at (515) 281-4791 or [Jeff.Berckes@dnr.iowa.gov](mailto:Jeff.Berckes@dnr.iowa.gov)



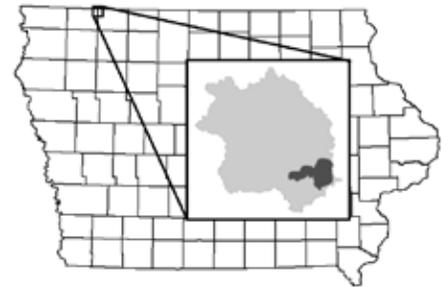
For more information on water quality improvement plans, please visit <http://watershed.iowadnr.gov>

# Silver Lake

Pollutant: *Turbidity*

Primary pollution Sources:

*Soil erosion, synthetic fertilizer loss, livestock manure, and internal phosphorus loading*



## What's wrong with Silver Lake?

Silver Lake is on the state's impaired waters list because of poor water clarity. Lakes with poor water clarity contain high levels of turbidity, which means that the water appears murky and unclear.

Occasionally, large amounts of algae are present in Silver Lake, which also contributes to high turbidity. Poor water clarity can make a lake visually unappealing, and affects recreation, such as swimming and boating.

## What is causing the problem?

Soil erosion, synthetic fertilizer and livestock manure that enter the lake from the watershed are just some of

the sources of pollutants that create poor water clarity in Silver Lake. Rainfall washes these materials, which contain phosphorus, into the lake. The sediment and phosphorus are suspended in the water column, which causes poor water clarity.

Because the lake is shallow, sediment and phosphorus are frequently mixed into the water column from the bottom of the lake in a process called "internal loading." The impacts of internal loading on water quality are more drastic in lakes containing large numbers of bottom-feeding fish such as common carp. Mixing caused by wind and power boating also increases turbidity caused by internal loading.



**Silver Lake**  
University of Iowa Hygienic Laboratory

## How can we improve Silver Lake?

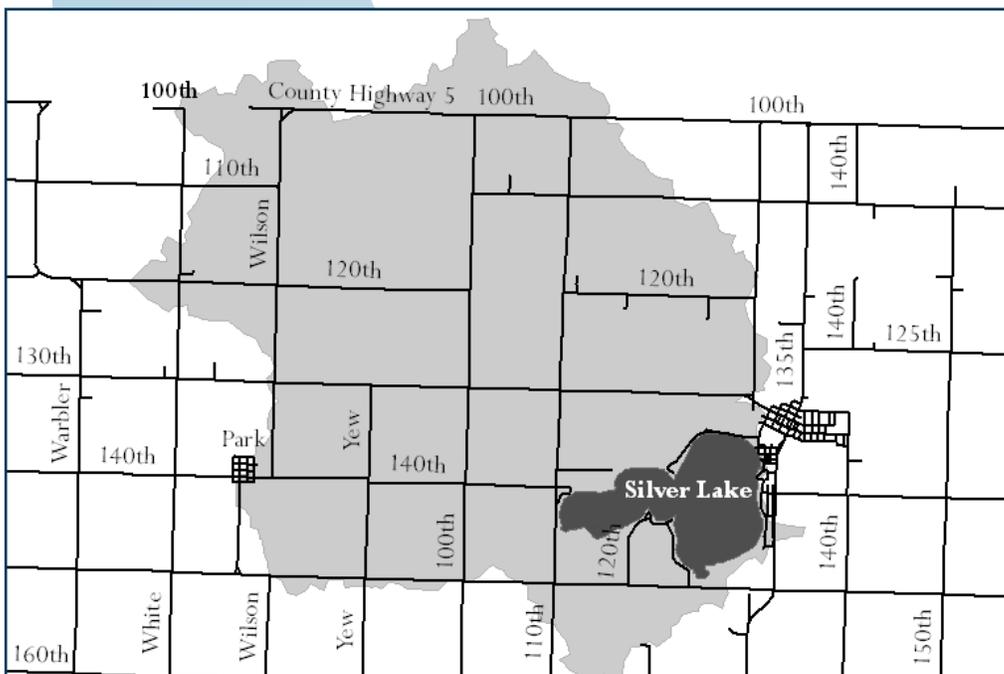
The goal is to improve water quality, restoring the lake's health and appeal for recreational use. Sources of sediment and phosphorus must be reduced to achieve this goal.

The DNR Watershed Improvement Section is conducting research and seeking public input to develop a water quality improvement plan, also known as a Total Maximum Daily Load (TMDL). This plan examines potential pollution sources and sets goals for reducing pollutants and improving water quality in Silver Lake.

When completed, this plan can guide local efforts for improving the health of Silver Lake and its watershed. The DNR can also provide additional technical assistance and grant funding opportunities to support those local efforts.

However, it is ultimately the responsibility of watershed residents and patrons of Silver Lake to take action and lead efforts to clean up the lake.

*The map below shows the Silver Lake watershed shaded in gray. A watershed is an area of land that drains into a body of water. In this case, all land shaded in gray drains into Silver Lake.*



The following are examples of conservation practices recommended by DNR for water quality improvement in Silver Lake:

- Increased conservation tillage on rowcrop lands
- Vegetative buffers adjacent to streams
- Reduction or elimination of livestock access to streams
- Strategic fertilizer and manure application techniques
- No phosphorus fertilizer use on shoreline properties
- Shoreline buffers and stabilization projects
- Water level management to establish rooted vegetation
- Fishery management to reduce bottom-feeding fish species
- Restoration of wetlands in the watershed
- Construction of sediment forebays around the lake